DOCUMENT RESUME

ED 431 167 CG 029 318

AUTHOR Wilkinson, Lee A.
TITLE Implementing the Scientist-Practitioner Model: A Case Study Using School-Based Behavioral Consultation.
PUB DATE 1998-00-00
NOTE 22p.
PUB TYPE Reports - Research (143)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Behavior Problems; Case Studies; Check Lists; *Consultation Programs; Elementary Secondary Education; Evaluation; Models; Observation; Outcomes of Treatment; *School Counseling; School Psychologists; Student Behavior; Students; Teachers
IDENTIFIERS *School Based Evaluation; *Scientist Practitioner Model

ABSTRACT

The integration of research and practice is considered essential to the effective delivery of school psychological services. The purpose of this case study is to demonstrate how school psychologists can implement the scientist-practitioner model in applied settings and deliver high quality consultative services to teachers and students. Behavioral consultation was conducted with a teacher of a general education student identified as exhibiting clinically significant externalizing behavior in the classroom. An AB case study design was utilized to analyze the effectiveness of a consultative treatment plan, namely contingency contracting, on the student's disruptive behavior. Direct observation and behavioral checklist data indicated a significant decrease in externalizing problem behavior from baseline to treatment. Positive treatment effects were maintained at a 4-week follow-up. Both teacher and student viewed the treatment plan as appropriate, fair, and reasonable. Results also indicated a high level of perceived consultant effectiveness and consumer satisfaction. The implications for school-based practitioners are discussed. (Contains 1 figure and 44 references.) (Author/MKA)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☑ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
L. Wilkinson
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Implementing the Scientist-Practitioner Model: A Case Study Using School-Based Behavioral Consultation

ED 431 167

Lee A. Wilkinson
School District of Palm Beach County, FL

Abstract: The integration of research and practice is considered essential to the effective delivery of school psychological services. The purpose of this case study is to demonstrate how school psychologists can implement the scientist-practitioner model in applied settings and deliver high quality consultative services to teachers and students. Behavioral consultation was was conducted with a teacher of a general education student identified as exhibiting clinically significant externalizing behavior in the classroom. An AB case study design was utilized to analyze the effectiveness of a consultative treatment plan (contingency contracting) on the student's disruptive behavior. Direct observation and behavioral checklist data indicated a significant decrease in externalizing problem behavior from baseline to treatment. Positive treatment effects were maintained at a 4-week follow-up. Both teacher and student viewed the treatment plan as appropriate, fair, and reasonable (acceptable). Results also indicated a high level of perceived consultant effectiveness and consumer satisfaction. The implications for school-based practitioners are discussed.

Enthusiasm for consultative approaches to educational services for children appears to be growing rapidly (Gutkin, 1993). Consultation has been identified as one of the professional activities most preferred by school psychologists (Gutkin & Curtis, 1990). Models using this indirect service delivery approach are widely viewed as being among those with the greatest potential for delivering assistance to the increasing number of students whose needs are not being met by existing programming (Zins, Kratochwill, & Elliott, 1993).

Although school psychologists generally draw on the strengths of various models, behavioral consultation has emerged as the preferred alternative to traditional service-delivery approaches in applied settings (Reschly, 1988). It is a well researched and potentially effective method of developing and delivering prereferral interventions in the classroom (Gresham & Kendell, 1987;

CG029318

BEST COPY AVAILABLE

Martens, 1993; Sheridan, Welch, & Orme, 1996; Wilkinson, 1997). The model contains a high degree of specificity and has been sufficiently operationalized to support the development of standard protocols for each stage of consultation (Bergan & Kratochwill, 1990; Kratochwill & Bergan, 1990).

The effective use of behavioral consultation in applied settings requires well planned and systematic interventions, measurement and data collection, and evaluation of treatment effects. Yet, school psychology practitioners report frequent use of school-based consultation services in which no baseline data are collected, the intervention is poorly planned, and no attempt is made to measure the effects of treatment (Reschly, 1988). Further, behavioral interventions are often doomed by poor consultee implementation. Consumers have consistently criticized consultation approaches for recommending unrealistic treatments and ignoring the preferences of the classroom teacher (Phillips & McCullough, 1990). As a result, consultees may not implement, or may do so without integrity, interventions perceived as unacceptable. According to Gresham (1989), "Many failures in consultation and intervention can be attributed to the fact that intervention plans are not implemented as intended" (p. 137).

The integration of research and practice is increasingly recognized as essential to the effective delivery of school psychological services. The consultation literature has much to offer the school psychologist in terms of "best practices" in applied settings. According to the representative research, the following elements are essential to improve the quality of school-based consultation services: (a) specification of the consultation model; (b) multiple outcome measures; (c) use of single subject designs; and (d) assessment of consumer satisfaction, treatment acceptability, and treatment integrity (Elliott & Busse, 1993; Gresham & Kendell, 1987; Gutkin, 1993; Sheridan, et al., 1996). Although infrequently applied in school settings, they are important for making consultation relevant and meaningful to practitioners (Gresham, 1989; Shapiro, 1987). The following case study demonstrates procedures by which school psychologists can implement the scientist-practitioner model and deliver high-quality consultation services that are linked directly to intervention and evaluation.

CASE STUDY

The purpose of this case study is to demonstrate the application of school-based behavioral consultation as a method of delivering treatment for students with significant behavior problems in the general education classroom. The model advanced by Bergan and Kratochwill (Bergan, 1977; Bergan & Kratochwill, 1990; Kratochwill & Bergan, 1990) provided a systematic framework for the practice of behavioral consultation. The four-stage consultation process consisted of problem identification, problem analysis, treatment implementation, and treatment evaluation, operationalized by three formal consultation sessions. Multi-method outcome assessment included direct classroom observations of target problem behavior and an empirically-based instrument to determine the clinical impact of consultative treatment (social validity). Treatment acceptability, treatment integrity, and consultant effectiveness were also evaluated during the consultation process.

Participants: Student, Consultee, and Consultant

Student selection was based on teacher referral, parental consent, and a clinically significant rating on the Externalizing scale of the Teacher's Report Form of the Child Behavior Checklist (TRF; Achenbach, 1991). The child in this case study was "Mary", an 8-year old girl referred for consultation by her fourth grade teacher for demonstrating a persistent pattern of disruptive behavior which interfered with the ability to comply with directions, classroom rules, and adhere to expectations for age-appropriate social conduct. Presenting problems included inattentiveness, poor peer interaction, physical aggression, and oppositional and defiant behavior. Analysis of Mary's TRF profile indicated clinically significant elevations on the Delinquent Behavior and Aggressive Behavior syndromes (Externalizing scale). Her teacher endorsed items such as "doesn't get along with other pupils," "steals," cruelty to others," "gets in many fights," "argues a lot," "disrupts class discipline," and "explosive behavior."

The case study was conducted in a suburban public elementary school. Consultation was initiated during the latter half of the school year. Mary's teacher served as the consultee and actively participated in each stage of the consultation process. The consultant was a credentialed school psychologist with training and experience in behavioral consultation practice.

Consultation Process

Traditional behavioral consultation was conducted in a general education classroom setting. Mary's teacher met with the consultant once prior to the initiation of consultation to establish rapport, and to clarify roles and responsibilities. The consultant followed the four-stage behavioral consultation procedure detailed by Kratochwill and Bergan (1990). Three formal interviews were held with the consultee. Specifically, a problem identification interview (PII) was conducted to initiate consultation services, specify the target problem (disruptive behavior), and discuss baseline data collection procedures. Mary's teacher assumed responsibility for observing and recording the target problem behavior. Following a baseline condition of 5 daily observation sessions, a problem analysis interview (PAI) was conducted to analyze data and validate the presenting problem. Ratings of student and consultee treatment acceptability were also completed at this time. A specific treatment plan was then recommended for implementation. The goal of treatment was to reduce Mary's disruptive behavior by applying positive behavior management procedures in the classroom. Mary's teacher continued to collect observational data for a period of 8 sessions during treatment implementation. Although no formal interviews were conducted during this stage of consultation, the consultant and consultee met periodically to monitor treatment integrity and maximize treatment implementation. Lastly, a treatment evaluation interview (TEI) was initiated to determine whether the treatment plan was effective. Ratings of student externalizing behavior and consultant effectiveness were also completed. The consultant recommended that Mary's teacher continue the treatment plan and incorporate reinforcement-based procedures in her classroom. A follow-up probe was conducted

4 weeks after the final consultation session to assess maintenance of treatment effects.

Behavioral Treatment Plan

A behavioral treatment plan was developed to reduce Mary's externalizing problem behavior. Primary consideration was given to procedures that were ethically sound, most positive, and least intrusive to the student. Positive reinforcement strategies have been shown to reduce a wide range of undesirable and disruptive behaviors in children (Elliott & Gresham, 1991; Goldstein, 1995; Stage & Quiroz, 1997). The reinforcement-based intervention strategy of behavioral contracting (contingency contracting) was selected as the consultative treatment component. Contingency contracting is a positive procedure that allows the student to play an active role in the change process (Kazdin, 1984). Contracts are also viewed positively by general educators (Martens, Peterson, Witt, & Cirone, 1986).

A behavioral contract was implemented in Mary's classroom. Her teacher received a sample contract, a list of reinforcers identified by elementary aged students, and a reinforcer survey. The teacher was also instructed in the use of positive reinforcement and advised to (a) choose reinforcers on the basis of the student's interests, (b) reinforce the student only after performance of the desired behavior, (c) reinforce the student as soon as possible after demonstration of the appropriate behavior, and (d) withhold reinforcement following an inappropriate response or behavior.

Mary and her teacher jointly identified behavior goals and contingencies for meeting those goals (reinforcer to be earned, time-frame for earning it, and number of occasions required for reinforcement). Contract goals included: (a) demonstrate appropriate on-task behavior by sitting quietly, looking at the materials, and completing the assigned task; (b) interact appropriately with other students by refraining from arguing, yelling, touching, or fighting; and (c) follow classroom rules by raising hand and waiting turn, talking in an acceptable manner, and complying with teacher directives. Student-selected reinforcers, provided on the basis of

meeting specific goals in students' contracts, included home-notes and access to preferred classroom activities such as additional computer time. The behavioral contract was flexible; teacher and student were able to renegotiate the target behaviors and reinforcement consequences.

Assessment Procedures

Measurement strategies were matched to the behavioral consultation model and the objectives of the treatment plan. The classroom setting was used for data collection purposes. Multi-method assessment was conducted throughout the study to determine whether consultation produced a meaningful change in Mary's disruptive behavior. Treatment acceptability, treatment integrity, and consultant effectiveness were assessed during various stages of the consultation process.

Direct observations. Fidelity to the behavioral consultation model of problem-solving requires systematic observation in order to determine the extent of plan effectiveness (Bergan, 1977; Bergan & Kratochwill, 1990; Kratochwill & Bergan, 1990). The consultee collected direct behavioral observations across baseline, treatment, and follow-up stages of consultation by coding Mary's classroom behavior. Daily observations were conducted in semi-structured classroom situations and during independent seat work. A partial interval recording procedure was used by Mary's teacher to measure the occurrence and nonoccurrence of target problem behavior. Disruptive behavior was defined as behavior characterized by inappropriate actions such as making noise, hitting, fighting, inattention, out-of-seat without permission, stealing, and threatening others (Lentz, 1988; Sattler, 1988). All inappropriate behaviors were collapsed under the global category of "disruptive off-task behavior." Data were collected at 10-second intervals for 15 minutes per observation session. The percentage of disruptive behavior was

calculated by dividing the number of intervals of target problem behavior by the total number of observed intervals multiplied by 100.

To ensure that data obtained from behavioral observations were reliable, interobserver agreement checks were conducted throughout the study. The consultant served as a secondary observer/rater and independently measured Mary's behavior during 25% of the sessions (Steege & Wacker, 1995). Interobserver agreement was calculated by dividing the number of agreements by the number of agreements plus disagreements multiplied by 100. Observers reached an average interobserver agreement of a least 85%, indicating that reliability was satisfactory.

Behavioral checklist. Empirically-based measures have been increasingly recommended for assessing children's behavioral/emotional problems in the classroom. The Teacher's Report Form of the Child Behavior Checklist (TRF; Achenbach, 1991) is among the most frequently used instruments for quantifying children's internalizing and externalizing behavior (McConaughy, Mattison, & Peterson, 1994). Researchers have found that the TRF Internalizing and Externalizing scales classify more children with behavioral/emotional problems in the clinical range than children with learning problems and nonreferred controls (Costenbader & Keller, 1990; McConaughy, et al., 1994).

The TRF was completed by Mary's teacher at pre- and posttreatment, and at a 4-week follow-up. A profile was scored from the TRF to provide a yardstick for determining changes in problem behavior. Raw scores and normalized T scores were obtained for the Delinquent Behavior and Aggressive Behavior syndrome scales, and the broad-based Externalizing scale. A classification of clinically "deviant" versus "nondeviant" was made according to the borderline clinical cutpoints which begin at the 95th percentile (T = 67) for the Delinquent and Aggressive Behavior syndrome scales and the 82nd percentile (T = 60) for the broad-based Externalizing scale.

Treatment acceptability. A revision of the Intervention Rating Profile (IRP-15; Witt & Elliott, 1985) was used to assess treatment acceptability during the problem analysis stage of consultation. Research has demonstrated that the IRP-15 is a reliable instrument (Cronbach's alpha = .98) and that it is sensitive to differences in the acceptability of various interventions (Martens, Witt, Elliott, & Darveaux, 1985; Witt, Elliott, & Martens, 1984; Witt & Martens, 1983). Mary's teacher was asked to respond to 15-items on a 6-choice Likert scale ranging from "Strongly Disagree" to "Strongly Agree." Acceptability ratings were obtained by summing the score across items (ranging from 15 to 90). The higher the total score, the more acceptable the behavioral treatment plan.

The Children's Intervention Rating Profile (CIRP; Witt & Elliott, 1985) was used to quantify student ratings of treatment acceptability. The CIRP represents an objective, single factor measure with an average coefficient alpha of .89 (Elliott, 1986). It has been used in clinical settings and is recommended for use in collecting data on students' perceptions of intervention acceptability (Elliott, 1986; Kratochwill & Bergan, 1990). Mary responded to seven items on a 6-choice Likert scale ranging from "I Agree" to "I Disagree". The CIRP was used in an interview rather than an individual paper and pencil format. The total CIRP score (ranging from 7 to 42) was used to determine Mary's acceptability of the treatment plan.

Consultant effectiveness. The Consultant Evaluation Form (CEF) developed by Erchul (1987) was administered to assess consultee perceptions of consultant effectiveness at the time of treatment evaluation. The CEF is a reliable instrument (Cronbach's alpha = .94) that has been used in school-based behavioral consultation research (Dunson, Hughes, & Jackson, 1994; Erchul, Covington, Hughes, & Myers, 1995) Mary's teacher responded to a 7-choice Likert scale ranging from "Strongly Disagree" to "Strongly Agree" on 12 items relating to the consultant's interpersonal and problem-solving skills. The sum of scores obtained on the CEF (ranging from 12 to 84) provided a measure of perceived consultation effectiveness and consumer satisfaction.

Treatment integrity. The integrity of the consultative treatment plan was monitored via direct observation, consultee self-reports, and anecdotal interviews (Gresham, 1989). Mary's teacher maintained monitoring records (contract and reinforcement contingencies) and subsequently displayed them for the consultant during the treatment implementation and evaluation stages of consultation. The consultant and consultee reviewed integrity data during the treatment evaluation interview (TEI) and reached a decision as to whether the treatment plan was implemented as planned.

Data analysis. An AB case study design was used to assess the efficacy of the treatment plan. The dependent variables included (a) direct observations of disruptive behavior and (b) empirically-based measures of externalizing behavior in the classroom. Changes in the percentage of problem behavior between baseline, treatment, and follow-up conditions were analyzed visually and descriptively. Percentage of overlapping data points was computed between baseline and treatment conditions. Low overlap was considered 0-25% of treatment data overlapping with baseline data, moderate overlap was considered 26-49%, and high overlap was considered 50% or more (Sheridan, Dee, Morgan, McCormack, & Walker, 1996). Behavioral checklist, treatment acceptability, and consultant effectiveness data were analyzed descriptively.

RESULTS

Treatment Effectiveness

Direct observations. The data collected by Mary's teacher are depicted in Figure 1. Observations over the course of treatment indicate a substantial effect on disruptive behavior. Mary's behavior improved dramatically, average disruptive behavior decreasing from 40% during baseline to 14% with the introduction of the treatment plan. This represents a 64%

improvement in problem behavior following treatment. The effectiveness of the treatment strategy is evident in the low level of overlapping data points (25%) across baseline and treatment conditions. Direct observational data also reflect the maintenance of positive treatment effects at follow-up.

Behavioral checklist. Normative comparisons of data derived from the Teacher's Report Form (TRF; Achenbach, 1991) were used to determine whether changes in Mary's behavior were clinically meaningful. Profile analysis indicated a significant change in externalizing behavior from pre- to posttreatment. Aggressive behavior decreased more than two standard deviations (T = 50) following treatment. Teacher reported broad-based externalizing behavior also decreased more than two standard deviations (T = 52) and fell below the borderline clinical cutpoint to the "nondeviant" range of functioning. Mary continued to demonstrate positive changes of more than one standard deviation in aggressive and broad-based externalizing behavior from pretreatment to follow-up.

Treatment Acceptability

The Intervention Rating Profile (IRP-15; Witt & Elliott, 1985) was administered to Mary's teacher to assess perception of treatment acceptability. Out of a possible score of 90, the total score was 87. This indicates high acceptability of the behavioral treatment plan. On a scale of 1 to 6, (with 6 representing high acceptability), Mary's teacher provided an average acceptability rating of 5.8. Highly acceptable ratings were obtained on items relating to (a) intervention acceptability, (b) willingness to use the intervention in the classroom, (c) lack of negative side effects, (d) fairness, and (e) reasonability of the intervention.

Mary's acceptability of the treatment plan was evaluated with the Children's Intervention Rating Profile (CIRP; Witt & Elliott, 1985). Out of a possible score of 42, the acceptability score was 38. This translates to a moderately high acceptable rating of the treatment procedure.

Mary provided ratings of 6 (high acceptability) to several items ("The plan is fair", "The plan will help me do better in school").

Consultant Effectiveness

The Consultant Evaluation Form (CEF; Erchul, 1987) was completed by Mary's teacher following the final consultation interview to assess her perception of consultant effectiveness. The total score was 84, indicating a high level of perceived effectiveness. She strongly agreed to items such as "The consultant helped find alternative solutions," "The consultant was a good listener," "The consultant viewed his role as a collaborator," and "I would request services from this consultant again."

Treatment Integrity

The integrity with which the behavioral treatment plan was implemented was monitored via brief informal observations, anecdotal interviews, and self-report procedures. The consultant met with Mary's teacher during the course of treatment to inquire about (a) the student's behavior, (b) whether rewards were provided for meeting contract goals, (c) what types of rewards were used, and (d) how often rewards were given. Student-selected tangible or activity rewards were provided for all occasions on which contract criteria were met. On other occasions verbal praise or long-term rewards were employed. The teacher displayed Mary's contract for the consultant during the course of treatment implementation and at the treatment evaluation interview (TEI), and reported 100% adherence to the treatment plan.

CASE DISCUSSION

The results of this case study support previous research on the effectiveness of school-based behavioral consultation as a model of providing intervention services to teachers and students (Erchul & Schulte, 1996; Galloway & Sheridan, 1994; Martens, 1993; Sheridan et al., 1996; Wilkinson, 1997). Direct teacher observations indicated a significant improvement in the percentage of Mary's disruptive behavior following implementation of the consultative treatment plan. Effectiveness was also demonstrated by the low level of overlapping data points between pre- and posttreatment conditions, and by maintenance of treatment effects (Gresham & Noell, 1993; Gutkin, 1993).

An important consideration is whether the consultative treatment plan produced a clinically important change in behavior. According to the TRF, Mary demonstrated significant improvement in aggressive and broad-based externalizing behavior following implementation of the treatment plan. The reduction in teacher-reported aggressive behavior from "deviant" to "nondeviant" levels is especially provocative in that the TRF Aggressive Behavior scale has been found to be a strong predictor of SED (seriously emotionally disturbed) classification and special education placement (McConaughy, et al., 1994).

Central to the success or failure of behavioral consultation is the selection and implementation of acceptable treatments. Research indicates a moderate to strong relationship between acceptability and treatment effectiveness (Elliott, 1988). Both teacher and student reported a favorable perception of the treatment plan. It is likely that when teachers and students perceive a treatment as fair and reasonable, compliance will follow, thereby increasing the probability of treatment effectiveness. Additionally, these data support previous findings in which researchers found consistently higher acceptability ratings for positive rather than for reductive behavior change strategies (Elliott, 1988).

One way of supporting the conclusion that treatments were responsible for outcomes is by evaluating the amount of improvement in behavior as it relates to the extent to which the

treatment plan was implemented as planned. Treatment integrity is an important link between the use and the effectiveness of consultative treatments. It represents the essence of applied behavior change and is critically important from both a research and practical standpoint (Gresham, Gansle, Noell, Cohen, & Rosenblum, 1993; Witt, Gresham, & Noell, 1996). If a treatment plan is implemented as planned, the probability of effecting behavioral change is enhanced. The teacher in this case study reported 100% fidelity to the treatment plan and a significant improvement in Mary's disruptive behavior. This illustrates the importance of monitoring treatment integrity and supports previous research in which higher integrity levels were generally associated with larger treatment effects (Gresham, et al., 1993).

Implications for Practice

This case study has a number of implications for the practicing school psychologist. For example, scheduling constraints and time requirements often pose difficulties for assessing the effectiveness of school-based behavioral consultation. The consultant should consider the relevance and cost-benefit ratio of selected measurement procedures. When limited resources are available for evaluating an intervention, the problem should be operationally defined in order to collect data directly related to the referral problem. If noncompliance is the primary treatment objective, data on academic performance is not necessary to determine consultation effectiveness. The administration of lengthy standardized test batteries and assessment procedures will only increase cost and likely produce little practical information relative to treatment efficacy (Galloway & Sheridan, 1994).

Behavioral consultation studies have made extensive use of single-subject designs to assess the degree of behavior change. They present a legitimate methodology for evaluating the effectiveness of treatment plans developed during consultation (Gresham & Noell, 1993). When measurement is possible but statistical controls untenable, they are a logical option. The basic time-series (AB) design tends to be user friendly and can be used to incorporate some aspects of

scientific research into the daily practice of consultation. School psychology practitioners will find the single-subject design well-suited for evaluating treatment effects in applied settings (Barlow & Hersen, 1984; Steege & Wacker, 1995; Wilkinson, 1997).

The selection and implementation of acceptable behavioral treatments are critical to the success of consultation (Elliott & Busse, 1993). The consultant should possess a repertoire of appropriate interventions that are positive, time efficient, and that can be easily demonstrated and implemented (Elliott, 1988). The school psychologist should also remember that not only the teacher's willingness to accept a treatment but the student's as well will play a significant role in consultation success and effective behavioral change. Ethical consideration and research on children's treatment acceptability support involving students in selecting treatment procedures (Elliott, 1988). Understanding what a student perceives as an acceptable treatment may help minimize resistance and enhance the potential of achieving the desired outcome. Both teachers' and students' treatment preferences should be considered whenever planning consultative treatment plans. Relatively inexpensive and simple rating scales such as the Intervention Rating Profile (IRP-15) and Children's Intervention Rating Profile (CIRP) can be used to collect acceptability data during the problem analysis stage of consultation (Kratochwill & Bergan, 1990).

Consultants should not simply assume that the consultee is implementing a treatment plan as intended. Failure to assess the degree to which a planned intervention is implemented makes it impossible to determine that changes in target behavior are due to the consultative treatment plan. Repeated checks on the implementation of an intervention are necessary and can be completed through checklists, informal interviews, and observations. The data derived from the monitoring of treatment integrity allows school psychologists to make adjustments to treatment plans, and to expend greater time and effort on the plan implementation stage of behavioral consultation (Froehle & Rominger, 1993; Gresham, et al., 1993).

Lastly, the number of measures used in this case study may appear impractical and difficult for school psychologists to apply in their everyday practice. Although reported in this case study

for illustrative purposes, all should be considered as important components of effective behavioral consultation practice. It is, however, possible to conduct consultation and draw meaningful conclusions with fewer measures. Given that time limitations are an ever-present reality in schools, the minimum procedures for initiating and evaluating behavioral consultation should include (a) direct observation of target problem behavior, (b) behavioral checklists, and (c) monitoring of treatment integrity (Galloway & Sheridan, 1994). Teacher and student treatment acceptability, consultant effectiveness, and maintenance of treatment effects should be assessed whenever possible.

CONCLUSION

School-based behavioral consultation provides an empirically sound method of delivering intervention services to teachers and students (Bramlett & Murphy, 1998; Erchul & Schulte, 1996; Martens, 1993; Sheridan, et al., 1996; Wilkinson, 1997). This case study demonstrates the successful application of the scientist-practitioner model in school psychology practice. It illustrates careful and systematic procedures by which the components of effective behavioral consultation can be utilized in applied settings. "In consultation, the scientist and practitioner roles are complementary" (Froehle & Rominger, 1993 p. 71). School psychologists are both consumers of research and practicing consultants. Incorporating the components outlined above into consultation practice will improve the quality of this indirect service delivery model and expand the knowledge base necessary for successful intervention selection and treatment of children's learning and behavior problems.

REFERENCES

Achenbach, T. M. (1991). *Manual for the Teacher's Report Form and 1991 Profile.* Burlington, VT: University of Vermont Department of Psychiatry.

Barlow, D., & Hersen, M. (1984). *Single-case experimental designs: Strategies for studying behavior change.* New York: Pergamon Press.

Bergan, J. R. (1977). *Behavioral consultation.* Columbus, OH: Charles E. Merrill.

Bergan, J. R., & Kratochwill, T. R. (1990). *Behavioral consultation and therapy.* New York: Plenum.

Bramlett, R. K., & Murphy, J. J. (1998). School psychology perspectives on consultation: Key contributions to the field. *Journal of Educational and Psychological Consultation, 9,* 29-55.

Costenbader, V. K., & Keller, H. R. (1990). Behavioral ratings of emotionally handicapped, learning disabled, and nonreferred children: Scale and source consistency. *Journal of Psychoeducational Assessment, 8,* 485-496.

Dunson, R. M., Hughes, J. N., & Jackson, T. W. (1994). Effect of behavioral consultation on student and teacher behavior. *Journal of School Psychology, 32,* 247-266.

Elliott, S. N. (1986). Children's ratings of the acceptability of classroom interventions for misbehavior: Findings and methodological considerations. *Journal of School Psychology,* 24-34.

Elliott, S. N. (1988). Acceptability of behavioral treatments: Review of variables that influence treatment selection. *Professional Psychology: Research and Practice, 19,* 68-80.

Elliott, S. N., & Busse, R. T. (1993). Effective treatments with behavioral consultation. In J. E. Zins, T. R. Kratochwill, & S. N. Elliott (Eds.), *Handbook of consultation services for children* (pp. 179-203). San Francisco: Jossey-Bass.

Elliott, S. N., & Gresham, F. M. (1991). *Social skills intervention guide.* Circle Pines, MN: American Guidance Service, Inc.

Erchul, W. P. (1987). Relational communication analysis of control in school consultation. *Professional School Psychology, 2,* 113-124.

Erchul, W. P., Covington, C. G., Hughes, J. N., & Meyers, J. (1995). Further explorations of request-centered relational communication within school consultation. *School Psychology Review, 4,* 621-632.

Erchul, W. P., & Schulte, A. C. (1996). Behavioral consultation as a work in progress: A reply to Witt, Gresham, and Noell. *Journal of Educational and Psychological Consultation, 7,* 345-354.

Froehle, T. C., & Rominger, R. L. (1993). Directions in consultation research: Bridging the gap between science and practice. *Journal of Counseling and Development, 71,* 693-699.

Galloway, J., & Sheridan, S. M. (1994). Implementing scientific practices through case studies: Using home-school interventions and consultation. *Journal of School Psychology, 32,* 385-413.

Goldstein, S. (1995). *Understanding and managing children's classroom behavior.* New York: Wiley.

Gresham, F. M. (1989). Assessment of treatment integrity in school consultation and prereferral intervention. *School Psychology Review, 18,* 37-50.

Gresham, F. M., Gansle, K. A., Noell, G. H., Cohen, S., & Rosenblum, S. (1993). Treatment integrity of school-based behavioral intervention studies 1980-1990. *School Psychology Review, 22,* 254-272.

Gresham, F. M., & Kendell, G. K. (1987). School consultation research: Methodological critique and research directions. *School Psychology Review, 16,* 306-316.

Gresham, F. M., & Noell, G. H. (1993). Documenting the effectiveness of consultation outcomes. In J. E. Zins, T.R. Kratochwill, & S. N. Elliott (Eds.), *Handbook of consultation services for children* (pp. 249-273). San Francisco: Jossey-Bass.

Gutkin, T. B. (1993). Conducting consultation research. In J. E. Zins, T. R. Kratochwill, & S. N. Elliott (Eds.), *Handbook of consultation services for children* (pp. 227-248). San Francisco: Jossey-Bass.

Gutkin, T. B., & Curtis, M. J. (1990). School-based consultation: Theory, techniques, and research. In T. B. Gutkin & C. R. Reynolds (Eds.), *The handbook of school psychology* (2nd ed., pp. 577-611). New York: Wiley.

Kazdin, A. E. (1984). *Behavior modification in applied settings* (3rd ed.). Homewood, IL: Dorsey Press.

Kratochwill, T. R., & Bergan, J. R. (1990). *Behavioral consultation in applied settings: An individual guide.* New York: Plenum.

Lentz, F. E. (1988). On-task behavior, academic performance, and classroom disruptions: untangling the target selection problem in classroom interventions. *School Psychology Review, 17,* 243-257.

Martens, B. K. (1993). A behavioral approach to consultation. In J. E. Zins, T. R. Kratochwill, & S. N. Elliott (Eds.), *Handbook of consultation services for children* (pp. 65-86). San Francisco: Jossey-Bass.

Martens, B. K., Peterson, R. L., Witt, J. C., & Cirone, J. M. (1986). Teacher perceptions of school-based interventions. *Exceptional Children, 53,* 213-223.

Martens, B. K., Witt, J. C., Elliott, S. N., & Darveaux , D. X. (1985). Teacher judgments concerning the acceptability of school-based interventions. *Professional Psychology: Research and Practice, 16,* 191-198.

McConaughy, S. H., Mattison, R. E., & Peterson, R. L. (1994). Behavioral/emotional problems of children with serious emotional disturbances and learning disabilities. *School Psychology review, 23,* 81-98.

Phillips, V., & McCullough, L. (1990). Consultation-based programming: Instituting the collaborative ethic in schools. *Exceptional Children, 56,* 291-304.

Reschly, D. J. (1988). Special education reform: School Psychology revolution. *School Psychology Review, 17,* 459-475.

Sattler, J. (1988). *Assessment of children.* (3rd. ed.). San Diego: Jerome Sattler.

Shapiro, E. (1987). Intervention research methodology in school psychology. *School Psychology Review, 16,* 290-305.

Sheridan, S. M., Dee, C. C., Morgan, J. C., McCormick, M. E., & Walker, D. (1996). A multimethod intervention for social skills deficits in children with ADHD and their parents. *School Psychology Review, 25,* 57-76.

Sheridan, S. M., Welch, M., & Orme, S. F. (1996). Is consultation effective? A review of outcome research. *Remedial and Special Education, 17,* 341-354.

Stage, S. A., & Quiroz, D. R. (1997). A meta-analysis of interventions to decrease disruptive classroom behavior in public education settings. *School Psychology review, 26,* 333-368.

Steege, M. W., & Wacker, D. P. (1995). Best practices in evaluating the effectiveness of applied interventions. In A. Thomas & J. Grimes (Eds.), *Best practices in school psychology-III* (pp. 625-636). Washington, DC: National Association of School Psychologists.

Wilkinson, L. A. (1997). School-based behavioral consultation: Delivering treatment for children's externalizing behavior in the classroom. *Journal of Educational and Psychological Consultation, 8,* 255-276.

Witt, J. C., & Elliott, S. N. (1985). Acceptability of classroom management strategies. In T. R. Kratochwill (Ed.), *Advances in school psychology.* (Vol. 4, pp. 251-288). Hillsdale, NJ: Lawrence Erlbaum.

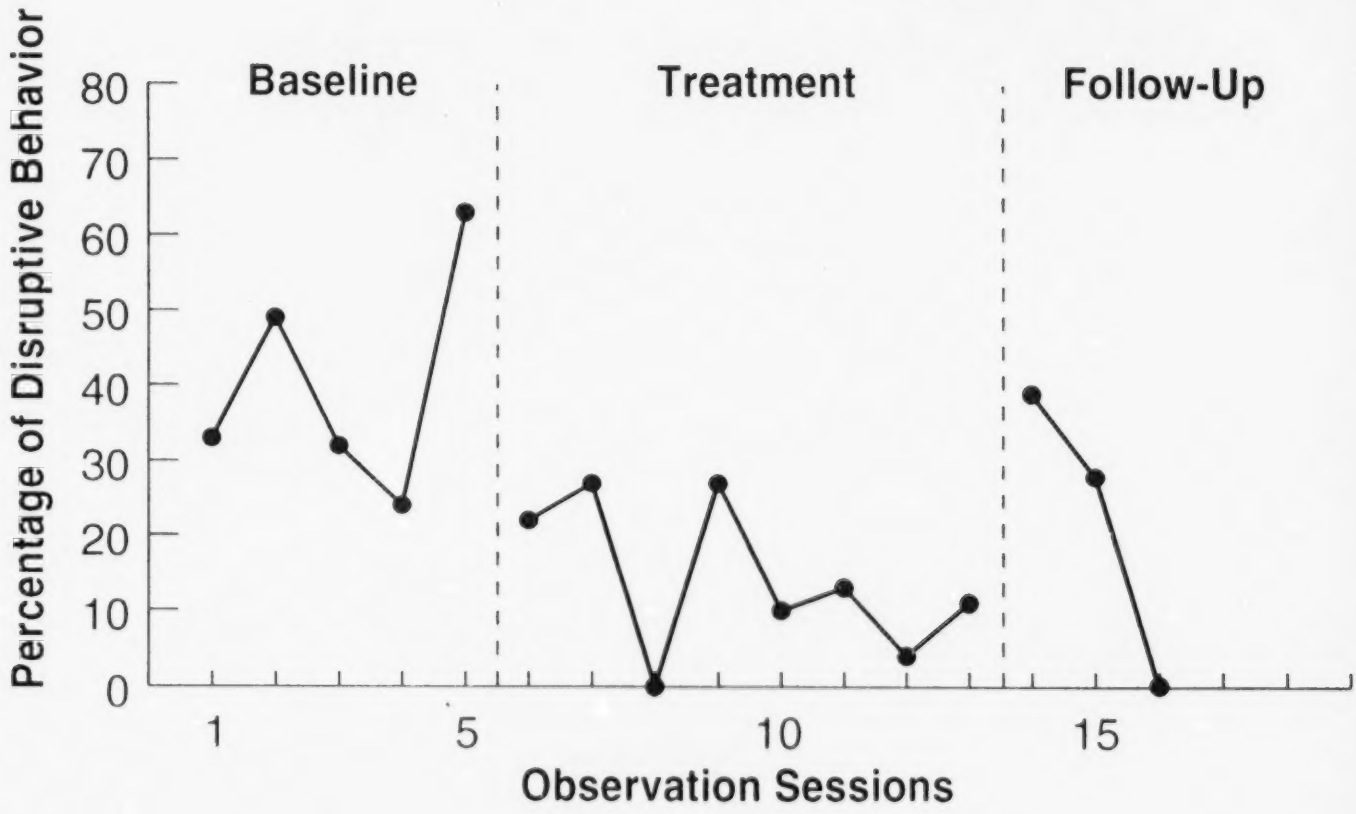
Witt, J. C., Elliott, S. N., & Martens, B. K. (1984). Acceptability of behavioral interventions used in classrooms: The influence of amount of teacher time, severity of behavior problem, and type of intervention. *Behavior Disorders, 9,* 95-104.

Witt, J. C., Martens, B. K. (1983). Assessing the acceptability of behavioral interventions in classrooms. *Psychology in the Schools, 20,* 510-517.

Witt, J. C., Gresham, F. M., & Noell, G. H. (1996). What's behavioral about behavioral consultation? *Journal of Educational and Psychological Consultation, 7,* 327-344.

Zins, J. E., Kratochwill, T. R., & Elliott, S. N. (1993). Current status of the field. In J. E. Zins, T. R. Kratochwill, & S. N. Elliott (Eds.), *Handbook of consultation services for children* (pp.1-12). San Francisco: Jossey-Bass.

FIGURE 1. Percentage of Mary's disruptive behavior across conditions.



Author Note

Lee A. Wilkinson, EdD, NCSP, is a school psychologist with the Palm Beach County, FL, School District. His research interests include behavioral consultation, prereferral intervention, and empirically-based assessment of child and adolescent behavioral and emotional disorders. Correspondence should be addressed to the author, W. T. Dwyer High School, School District of Palm Beach County, 13601 North Military Trail, Palm Beach Gardens, FL 33418. E-mail: <LWilkinson@compuserve.com>